

REMARKS

Claim Rejections - 35 USC 102

Claims 1-3, 6, and 28-31

Claims 1-3, 6 and 28-31 stand rejected as anticipated by Morris '941.

Claims 1 and 28 have been amended to add limitations directed to the fabrication of an electroluminescent device, i.e., the provision of first and second electrodes has been added. Morris is not directed to the fabrication of electroluminescent devices that include electrodes, and does not disclose or suggest the fabrication of such devices. Electroluminescent devices have special considerations relating to an emissive dopant. For example, there is a specific range of concentrations of dopant needed to provide sufficient emissive molecules, while avoiding problems such as quenching that may occur if the concentration is too high. Also, the various energy levels of the host and dopant materials (i.e., the highest occupied molecular orbital and the lowest unoccupied molecular orbital) are relevant to whether a functional device may be fabricated. As a result, it is not obvious to add the provision of electrodes to the process disclosed in Morris. It is believed the addition of electrodes to distinguish over Morris '941 is consistent with the discussion in the office action at page 2, para. 3, re: claim 41. The Applicants respectfully request reconsideration and withdrawal of this rejection.

Claims 2-3, 6 and 29-31 are ultimately dependent on claim 1 or 28, and are patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of these claims does not indicate acquiescence.

In addition, with respect to claim 6, Morris does not disclose "light emission" in the sense of the present application, but rather discloses materials that selectively absorb, transmit, and absorb certain wavelengths of light. This is relevant for the reasons discussed above with respect to claims 1 and 28.

Claims 19, 24-25 and 27

Claims 19, 24-25 and 27 stand rejected as anticipated by Kaszczuk '444.

Claim 19 has been amended to add limitations directed to the fabrication of an electroluminescent device, i.e., the provision of first and second electrodes has been added. Kaszczuk is not directed to the fabrication of electroluminescent devices that include electrodes,

and does not disclose or suggest the fabrication of such devices. Kaszczuk may be distinguished based on arguments similar to those made regarding Morris, above. In addition, Kaszczuk discloses a thermal transfer process where the temperature range is 160-220 C, with 205 C specifically discussed as giving good results. One of skill in the art may expect that processing at these temperatures may cause undesirable morphological changes in the organic materials generally used in organic electronic devices (i.e., devices having organic materials between electrodes), and would not be motivated to use the disclosure of Kaszczuk.

Claims 24-25 and 27 are ultimately dependent on claim 19, and are patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of these claims does not indicate acquiescence.

Claim 9

Claim 9 stands rejected as anticipated by Kim '746. Claim 9 has been amended as suggested in paragraph 23 of the January 20, 2004 office action. Applicants respectfully request reconsideration and withdrawal of this rejection.

Claims 1-3, 5-7, 9, 28-31, 36 and 41

Claims 1-3, 5-7, 9, 28-31, 36 and 41 stand rejected as anticipated by Shirasaki '692. The Applicants respectfully traverse this rejection.

Each of independent claims 1, 28 and 36 require the use of a solvent to diffuse a dopant into an organic material. As indicated in the previous (8/29/03) office action at page 4, Shirasaki does not disclose this feature. While Shirasaki may disclose a PVC substrate and coumarin pigments, Shirasaki does *not* disclose any particular solvent, and particularly does not disclose the specific solvents that the Applicants have shown can be used to cause a dopant to diffuse into a host material. The assertion in the office action, para. 6, page 4 that "the same phenomenon of diffusion must have occurred in the case of Shirasaki '692 as did in the case of the Applicant" is therefore not supported.

With respect to the teachings of Shirasaki at col. 7, lines 15-30, discussed in paras. 6 and 23 (pages 12-13), Shirasaki *does not* teach that the solvent causes the dopants to diffuse into an organic material. Rather, col. 7, lines 15-23 state that a solvent may be used to apply the dopants. Col. 7, lines 24-25 state that the pigment may be directly applied. Col 7., lines 26-30

teach that the surface to which the pigment (whether liquid or not) was applied is heated to diffuse the pigment into the surface. There is no specific teaching that the solvent used to deposit the pigment is still “present at the time of energization” -- rather, the word “liquid” at col. 7, line 28 is used to describe the surface to which the pigment was previously applied. Nor is there any teaching that it is the solvent that causes diffusion, or even that the solvent itself is able to diffuse into or wet the underlying layer. Rather, Shirasaki teaches that pigment diffuses only after energy is applied, i.e., “subsequently” to the application of the pigment. Shirasaki, col. 7, line 26. Shirasaki stresses the importance of the application of energy to this diffusion. see col. 7, lines 37-54.

When Shirasaki specifically addresses whether the solvent is present during the heating step, it teaches that the fluorescent pigment applied with a solvent will “dry,” and is only subsequently “diffused” into the organic layer after the solvent is “dried.” Shirasaki, col. 9, lines 13-23.

Claims 2-3, 5-7, 29-31 are each dependent on one of independent claims 1, 28 or 36, and are patentable for at least the same reasons. The Applicants’ silence with respect to the specific grounds for rejection of these claims does not indicate acquiescence.

With respect to claim 9, Shirasaki does not teach the required claim elements of “applying an organic coating having a dopant” and subsequently “removing the dopant from areas of the coating.” The office action suggests (para 6, page 5) that these elements are taught at Shirasaki, col. 1, lines 41-67. That section of Shirasaki discloses the use of a “common solvent” to apply a mixture of “a material for the dispersion medium layer and the pigment to constitute dispersoid.” The *solvent* is subsequently removed by drying. There is no teaching that the *dopant* is also removed. To the contrary, the whole point of the process is to create an end product where the dopant is still present in the layer -- with “the dispersion medium layer (i.e. a hole transport layer) in which the dispersoid pigment (i.e. fluorescent pigment) is dispersed.” Shirasaki, col. 1, lines 48-50.

The Applicants respectfully request reconsideration and withdrawal of these rejections.

Claim Rejections - 35 USC 103

Claims 5 and 36

Claims 5 and 36 stand rejected as obvious over Morris '451 in view of Matsuishi '457.

Claim 5 is ultimately dependent on claim 1, and is patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of this claim does not indicate acquiescence.

Claim 36 has been amended to include limitations directed to the provision of first and second electrodes, similar to the limitations in claim 1. Claim 36 is therefore patentable over Morris for the same reasons discussed above with respect to claim 1. Matsuishi, like Morris, does not disclose the provision of electrodes.

The Applicants respectfully request reconsideration and withdrawal of these rejections.

Claims 7 and 37

Claims 7 and 37 stand rejected as obvious over Morris '451 in view of Nohr '356.

These claims are ultimately dependent on claim 1 or claim 36, and are patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of these claims does not indicate acquiescence.

Claim 8

Claim 8 stands rejected as obvious over Morris '451 in view of Nohr '356 and in further view of Sato '884.

Claim 8 is ultimately dependent on claim 1, and is patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of this claim does not indicate acquiescence.

Claim 38

Claim 38 stands rejected as obvious over Morris '451 in view of Nohr '356 and in further view of Tsuchiya '223.

Claim 38 is ultimately dependent on claim 36, and is patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of this claim does not indicate acquiescence.

Claim 39

Claim 39 stands rejected as obvious over Morris '451 in view of Mansukhani '694.

Claim 39 is ultimately dependent on claim 36, and is patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of this claim does not indicate acquiescence.

Claim 40

Claim 40 stands rejected as obvious over Morris '451 in view of Mansukhani '694, and in further view of Tsuchiya '223.

Claim 40 is ultimately dependent on claim 36, and is patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of this claim does not indicate acquiescence.

Claims 9-10, 12 and 14

Claims 9-10, 12 and 14 stand rejected as obvious over Nojiri '111 in view of Kun '956.

Nojiri at col. 35, lines 27-67, does not teach the removal of a dopant from an organic coating, such that "the areas of the coating from which the dopant is removed remain over the first electrode after the dopant is removed" as required by claim 9. Rather, Nojiri '111 is similar to Kim '746, which was addressed in the previous October 21, 2003 response to office action at page 10, and which is further discussed at para. 23, page 12 of the present January 20, 2004 office action. Specifically, Nojiri '111 teaches the removal of "the unnecessary portion of the phosphor-containing photosensitive resin composition layer (A) 7." col. 35, lines 47-49. The "unnecessary portion" is removed in its entirety -- there is no teaching or suggestion that the dopant is leached out, leaving a host behind. Kun '956 does not address this element lacking in Nojiri '111.

The Applicants are uncertain as to whether the comment in para 23: "Claims 9-10, 12, 14: See discussion of Kim, above" is a suggestion that the present amendment to claim 9, made to address Kim, also addresses the rejection based on Nojiri.

Claims 10, 12 and 14 are ultimately dependent on claim 9, and are patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of these claims does not indicate acquiescence.

Claims 20 and 21

Claims 20 and 21 stand rejected as obvious over Kaszczuk '444 in view of Boggs '230.

These claims are ultimately dependent on claim 19, and are patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of these claims does not indicate acquiescence.

Claim 23

Claim 23 stands rejected as obvious over Kaszczuk '444 in view of Yamano '858.

Claim 23 is ultimately dependent on claim 19, and is patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of this claim does not indicate acquiescence.

Claim 26

Claim 26 stands rejected as obvious over Kaszczuk '444 in view of Mayer '823, and in further view of Sato '884.

Claim 26 is ultimately dependent on claim 19, and is patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of this claim does not indicate acquiescence.

Claim 8

Claim 8 stands rejected as obvious over Shirasaki '692 in view of Tamano '042.

Claim 8 is ultimately dependent on claim 1, and is patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of this claim does not indicate acquiescence.

Claims 37-40

Claims 37-40 stand rejected as obvious over Shirasaki '692 in view of Yuh '047.

These claims are ultimately dependent on claim 1, and are patentable for at least the same reasons. The Applicants' silence with respect to the specific grounds for rejection of these claims does not indicate acquiescence.

Additional Comments

Claim 41 has been canceled.

The Applicants respectfully acknowledge the allowance of claims 15-18.

The Applicants respectfully acknowledge the allowability of claims 11 and 13, if rewritten in independent form. But, the Applicants submit that a convincing argument has been made above for the allowability of base claim 9, and respectfully requests withdrawal of the objection to claims 11 and 13.

The Applicants respectfully acknowledge the allowability of claims 10, 12 and 14, if rewritten in independent form. But, the Applicants submit that a convincing argument has been made above for the allowability of base claim 9, and respectfully requests withdrawal of the objection to claims 10, 12 and 14.

Claim 9 has been amended as suggested in para. 23 of the office action.

Shirasaki, Kim and Kaszczuk have been addressed above.

CONCLUSION


Withdrawal of all pending objections and rejections, and allowance of the above-reference application, is respectfully requested.

Respectfully submitted,

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